

## Author index

Abe, H. 207  
Adinolfi, M. 111, 119  
Asano, N. 169

Bailey, C.J. 265  
Bandwar, R.P. 73  
Barnes, C.L. 11  
Basu, B. 135  
Blackwell, J. 85

Church, T.J. 135  
Corsaro, M.M. 111, 119  
Craig, D.C. 249, 265

De Castro, C. 111, 119  
Drew, K.N. 135

Ellis, P.R. 229  
Evidente, A. 111, 119

Farrant, R.D. 51  
Feather, M.S. 11  
Fuongfuchat, A. 85  
Furieux, R.H. 279

Garg, A. 223  
Garg, H.G. 223  
Gerken, T.A. 85  
Giralt, M. 73  
Glaudemans, C.P.J. 191  
Glinsky, G.V. 11  
Goto, T. 207  
Grainger, C.T. 265

Hasegawa, A. 179  
Hashimoto, H. 61  
Hidalgo, J. 73

Ishida, H. 179  
Ishii, T. 1  
Isobe, M. 207

James, V.J. 265  
Jamieson, A.M. 85

Kačuráková, M. 145  
Kakinuma, H. 61  
Kato, A. 169  
Kiso, M. 179  
Kizu, H. 169  
Kondo, T. 207

Lai, L. 25  
Lammers, H. 159  
Lanzetta, R. 111, 119  
Lavermicocca, P. 119  
Le Questel, J.-Y. 35  
Lindon, J.C. 51

Madhusudhan, B. 101  
Mathlouthi, M. 145  
Matsui, K. 169  
Matsunaga, T. 1  
Miyauchi, M. 169  
Miyawaki, R. 179  
Molinaro, A. 111  
Mossine, V.V. 11  
Mouhous-Riou, N. 35

Neame, P.J. 223  
Ng, C.J. 241, 249

Oscarson, S. 271

Parrilli, M. 111, 119  
Pérez, S. 35  
Peters, J.A. 159  
Petráková, E. 191

Rao, C.P. 73  
Reid, J.S.G. 229  
Ritzén, H. 271  
Ross-Murphy, S.B. 229

Sanderson, P.N. 51  
Serianni, A.S. 135  
Siebert, J.W. 223  
Stevens, J.D. 241, 249, 265  
Stevenson, D.E. 279  
Sweatman, B.C. 51  
  
Tang, Y. 25  
Tharanathan, R.N. 101  
Tomoo, T. 207  
Tsukamoto, S. 207

van Bekkum, H. 159  
Vuorinen, T. 135

Wang, Q. 229

Yamamoto, M. 169  
Yang, Y. 25  
Yokoyama, Y. 169  
Yuasa, H. 61

Zhang, H. 25

## Subject index

### Acetals

- Preparation of mono-*O*-isopropylidene derivatives of methyl  $\alpha$ -D-glucoseptanoside 241
- Preparation of methyl  $\beta$ -L-idoseptanoside and its derivatives 249

### Alginate

- Rheological studies of the interaction of mucins with alginate and polyacrylate 85

### 1-Alkylamino-1-deoxy-D-alditols

- Coordination of Cd(II) by *N*-alkylamino sugars in aqueous solution as studied by potentiometry and NMR spectroscopy 159

### Allyl galactoside

- Synthesis of allyl  $\beta$ -D-galactopyranoside from lactose using *Streptococcus thermophilus*  $\beta$ -D-galactosidase 279

### L-Ascorbic acid, <sup>13</sup>C-labeled, Synthesis

- L-(1-<sup>13</sup>C)- and (2-<sup>13</sup>C)ascorbic acid: synthesis and NMR characterization 135

### Boron

- Isolation and characterization of a boron-rhamnogalacturonan-II complex from cell walls of sugar beet pulp 1

### Bridgehead amino group

- Calystegin N<sub>1</sub>, a novel nortropane alkaloid with a bridgehead amino group from *Hyoscyamus niger*: structure determination and glycosidase inhibitory activities 169

### Calystegin

- Calystegin N<sub>1</sub>, a novel nortropane alkaloid with a bridgehead amino group from *Hyoscyamus niger*: structure determination and glycosidase inhibitory activities 169

### Carbocyclic sugar

- Caryose: a carbocyclic monosaccharide from *Pseudomonas caryophylli* 111

### Carbohydrates

- Synthesis of 6-*O*-acetyl-2,3,4-tri-*O*-[(*S*)-2-methylbutyryl]sucrose and the three regioisomers of 6-*O*-acetyl-2,3,4-*O*-[(*S*)-2-methylbutyryl]-di-*O*-[(*S*)-3-methylpentanoyl]sucrose, naturally occurring fatty acid esters of sucrose found in tobacco 271

### Caryophyllose

- Analysis of the polysaccharide components of the lipopolysaccharide fraction of *Pseudomonas caryophylli* 119

### Caryose

- Caryose: a carbocyclic monosaccharide from *Pseudomonas caryophylli* 111
- Analysis of the polysaccharide components of the lipopolysaccharide fraction of *Pseudomonas caryophylli* 119

### <sup>113</sup>Cd NMR

- Coordination of Cd(II) by *N*-alkylamino sugars in aqueous solution as studied by potentiometry and NMR spectroscopy 159

### Cell walls

- Isolation and characterization of a boron-rhamnogalacturonan-II complex from cell walls of sugar beet pulp 1

### Ceramide

- Systematic synthesis of  $\alpha$ -sialyl-(2  $\rightarrow$  3)- and -(2  $\rightarrow$  6)-isoglobopentaosylceramides (V<sup>3</sup>Neu5-AciGb<sub>5</sub>Cer and V<sup>6</sup>Neu5AciGb<sub>5</sub>Cer) 179

### Cereal

- Structural studies of linear and branched fractions of chickpea and finger millet starches 101

### <sup>13</sup>C NMR spectroscopy

- Coordination of Cd(II) by *N*-alkylamino sugars in aqueous solution as studied by potentiometry and NMR spectroscopy 159

### Complex, metal-saccharide

- Metal-saccharide chemistry and biology: saccharide complexes of zinc and their effect on metallothionein synthesis in mice 73

### Conformations

- Preparation of mono-*O*-isopropylidene derivatives of methyl  $\alpha$ -D-glucoseptanoside 241

- Preparation of methyl  $\beta$ -L-idoseptanoside and its derivatives 249
- The crystal structure of methyl 5-O-acetyl-2-O-benzoyl-3,4-O-isopropylidene- $\beta$ -L-idoseptanoside 265
- Conformation search
- Conformational analysis of two glycoproteins: a Monte Carlo simulated annealing approach using a soft-sphere potential 25
- 4,8-Cyclo-3,9-dideoxy-L-erythro-D-ido-nonose
- Caryose: a carbocyclic monosaccharide from *Pseudomonas caryophylli* 111
- N-(2-Deoxy-D-aldohexos-2-yl)-glycines
- Molecular and crystal structure of N-(2-deoxy-D-aldohexos-2-yl)-glycines (Heyns compounds) 11
- Deoxy sugar
- Caryose: a carbocyclic monosaccharide from *Pseudomonas caryophylli* 111
- Detarium seed
- A new polysaccharide from a traditional Nigerian plant food: *Detarium senegalense* Gmelin 229
- Digestibility
- Structural studies of linear and branched fractions of chickpea and finger millet starches 101
- Enzymic synthesis
- Synthesis of allyl  $\beta$ -D-galactopyranoside from lactose using *Streptococcus thermophilus*  $\beta$ -D-galactosidase 279
- Fluorosugars
- Assignment of the  $^1\text{H}$ ,  $^{19}\text{F}$ , and  $^{13}\text{C}$  NMR spectra of 2-deoxy-2-fluoro-D-ribose and characterisation of the isomeric equilibrium 51
- FTIR-ATR
- FTIR and laser-Raman spectra of oligosaccharides in water: characterization of the glycosidic bond 145
- $\beta$ -D-Galactosidase
- Synthesis of allyl  $\beta$ -D-galactopyranoside from lactose using *Streptococcus thermophilus*  $\beta$ -D-galactosidase 279
- Ganglioside
- Systematic synthesis of  $\alpha$ -sialyl-(2  $\rightarrow$  3)- and -(2  $\rightarrow$  6)-isoglobopentaosylceramides ( $\text{V}^3\text{Neu5-AciGb}_5\text{Cer}$  and  $\text{V}^6\text{Neu5AciGb}_5\text{Cer}$ ) 179
- An efficient short-step total synthesis of ganglioside  $\text{GM}_3$ : effective usage of the neighbouring group participation strategy 207
- Glucanase
- A new polysaccharide from a traditional Nigerian plant food: *Detarium senegalense* Gmelin 229
- $\alpha$ -Glucosyltransferase
- Synthesis of 1',6'-disubstituted sucroses and their behavior as glucosyl donors for a microbial  $\alpha$ -glucosyltransferase 61
- Glycolipid
- An efficient short-step total synthesis of ganglioside  $\text{GM}_3$ : effective usage of the neighbouring group participation strategy 207
- Glycoprotein
- Conformational analysis of two glycoproteins: a Monte Carlo simulated annealing approach using a soft-sphere potential 25
- Glycosaminoglycan
- Molecular structure of [4-(4-cyanobenzoyl)phenyl] 1,5-dithio- $\beta$ -D-xylopyranoside (naro-parcil) in the solid state and in solution: an investigation by X-ray crystallography, molecular mechanics calculations, and NMR spectroscopy 35
- Glycosidase inhibitor
- Calystegin  $\text{N}_1$ , a novel nortropane alkaloid with a bridgehead amino group from *Hyoscyamus niger*: structure determination and glycosidase inhibitory activities 169
- Glycosides, methyl
- Synthesis of the methyl  $\alpha$ -glycosides of some isomalto-oligosaccharides specifically deoxygenated at position C-3 191
- Glycosides, synthesis
- Synthesis of the methyl  $\alpha$ -glycosides of some isomalto-oligosaccharides specifically deoxygenated at position C-3 191
- Glycosidic bond
- FTIR and laser-Raman spectra of oligosaccharides in water: characterization of the glycosidic bond 145
- Heyns compound
- Molecular and crystal structure of N-(2-deoxy-D-aldohexos-2-yl)-glycines (Heyns compounds) 11
- High resolution NMR spectroscopy
- Molecular structure of [4-(4-cyanobenzoyl)phenyl] 1,5-dithio- $\beta$ -D-xylopyranoside (naro-parcil) in the solid state and in solution: an investigation by X-ray crystallography, molecular mechanics calculations, and NMR spectroscopy 35
- Homopolysaccharide
- Analysis of the polysaccharide components of the lipopolysaccharide fraction of *Pseudomonas caryophylli* 119
- Hyoscyamus niger*
- Calystegin  $\text{N}_1$ , a novel nortropane alkaloid with a bridgehead amino group from *Hyoscyamus niger*: structure determination and glycosidase inhibitory activities 169



**L-Idoseptanosides**

Preparation of methyl  $\beta$ -L-idoseptanoside and its derivatives 249

**Isoglobopentaosylceramide**

Systematic synthesis of  $\alpha$ -sialyl-(2  $\rightarrow$  3)- and -(2  $\rightarrow$  6)-isoglobopentaosylceramides (V<sup>3</sup>Neu5-AciGb<sub>5</sub>Cer and V<sup>6</sup>Neu5AciGb<sub>5</sub>Cer) 179

**Lactose**

Synthesis of allyl  $\beta$ -D-galactopyranoside from lactose using *Streptococcus thermophilus*  $\beta$ -D-galactosidase 279

**Laser-Raman**

FTIR and laser-Raman spectra of oligosaccharides in water: characterization of the glycosidic bond 145

**Legume**

Structural studies of linear and branched fractions of chickpea and finger millet starches 101

**Metal ion sequestration**

Coordination of Cd(II) by *N*-alkylamino sugars in aqueous solution as studied by potentiometry and NMR spectroscopy 159

**Metallothionein**

Metal-saccharide chemistry and biology: saccharide complexes of zinc and their effect on metallothionein synthesis in mice 73

**Molecular mechanics**

Molecular structure of [4-(4-cyanobenzoyl)phenyl] 1,5-dithio- $\beta$ -D-xylopyranoside (naro-parcil) in the solid state and in solution: an investigation by X-ray crystallography, molecular mechanics calculations, and NMR spectroscopy 35

**Monte Carlo**

Conformational analysis of two glycoproteins: a Monte Carlo simulated annealing approach using a soft-sphere potential 25

**Mucins**

Rheological studies of the interaction of mucins with alginate and polyacrylate 85

**Ni(II) complexes**

Coordination of Cd(II) by *N*-alkylamino sugars in aqueous solution as studied by potentiometry and NMR spectroscopy 159

**NMR**

Assignment of the <sup>1</sup>H, <sup>19</sup>F, and <sup>13</sup>C NMR spectra of 2-deoxy-2-fluoro-D-ribose and characterisation of the isomeric equilibrium 51

Preparation of mono-*O*-isopropylidene derivatives of methyl  $\alpha$ -D-glucoseptanoside 241

**NMR characterization**

L-(1-<sup>13</sup>C)- and (2-<sup>13</sup>C)ascorbic acid: synthesis and NMR characterization 135

**Oligosaccharide**

Systematic synthesis of  $\alpha$ -sialyl-(2  $\rightarrow$  3)- and -(2  $\rightarrow$  6)-isoglobopentaosylceramides (V<sup>3</sup>Neu5-AciGb<sub>5</sub>Cer and V<sup>6</sup>Neu5AciGb<sub>5</sub>Cer) 179

**Oligosaccharides,  $\alpha$ -isomalto-**

Synthesis of the methyl  $\alpha$ -glycosides of some isomalto-oligosaccharides specifically deoxygenated at position C-3 191

**Participation, neighbouring group**

An efficient short-step total synthesis of ganglioside GM<sub>3</sub>: effective usage of the neighbouring group participation strategy 207

**Pectic polysaccharide**

Isolation and characterization of a boron-rhamnogalacturonan-II complex from cell walls of sugar beet pulp 1

**Polyacrylate**

Rheological studies of the interaction of mucins with alginate and polyacrylate 85

**Polysaccharide**

A new polysaccharide from a traditional Nigerian plant food: *Detarium senegalense* Gmelin 229

***Protaminobacter rubrum***

Synthesis of 1',6'-disubstituted sucroses and their behavior as glucosyl donors for a microbial  $\alpha$ -glucosyltransferase 61

**Proteoglycan, iduronic acid-containing**

Inseparable iduronic acid-containing proteoglycan PG<sub>(IdoA)</sub> preparations of human skin and post-burn scar tissues: evidence for elevated levels of PG<sub>(IdoA)</sub>-I in hypertrophic scar by N-terminal sequencing 223

***Pseudomonas caryophylli***

Caryose: a carbocyclic monosaccharide from *Pseudomonas caryophylli* 111

Analysis of the polysaccharide components of the lipopolysaccharide fraction of *Pseudomonas caryophylli* 119

**Regioselective protection**

Synthesis of 6-*O*-acetyl-2,3,4-tri-*O*-[(*S*)-2-methylbutyryl]sucrose and the three regioisomers of 6-*O*-acetyl-2,3,4-*O*-[(*S*)-2-methylbutyryl]-di-*O*-[(*S*)-3-methylpentanoyl]sucrose, naturally occurring fatty acid esters of sucrose found in tobacco 271

**Rhamnogalacturonan-II**

Isolation and characterization of a boron-rhamnogalacturonan-II complex from cell walls of sugar beet pulp 1

**Rheological studies**

Rheological studies of the interaction of mucins with alginate and polyacrylate 85

## Ribose

Assignment of the  $^1\text{H}$ ,  $^{19}\text{F}$ , and  $^{13}\text{C}$  NMR spectra of 2-deoxy-2-fluoro-D-ribose and characterisation of the isomeric equilibrium 51

## Scar, hypertrophic

Inseparable iduronic acid-containing proteoglycan  $\text{PG}_{(\text{IdoA})}$  preparations of human skin and post-burn scar tissues: evidence for elevated levels of  $\text{PG}_{(\text{IdoA})}$ -I in hypertrophic scar by N-terminal sequencing 223

## Septanosides

Preparation of mono-O-isopropylidene derivatives of methyl  $\alpha$ -D-glucoseptanoside 241  
The crystal structure of methyl 5-O-acetyl-2-O-benzoyl-3,4-O-isopropylidene- $\beta$ -L-idoseptanoside 265

## Simulated annealing

Conformational analysis of two glycoproteins: a Monte Carlo simulated annealing approach using a soft-sphere potential 25

## Skin

Inseparable iduronic acid-containing proteoglycan  $\text{PG}_{(\text{IdoA})}$  preparations of human skin and post-burn scar tissues: evidence for elevated levels of  $\text{PG}_{(\text{IdoA})}$ -I in hypertrophic scar by N-terminal sequencing 223

## Starches

Structural studies of linear and branched fractions of chickpea and finger millet starches 101

## Structural studies

Structural studies of linear and branched fractions of chickpea and finger millet starches 101

## Structure determination

Calystegin  $\text{N}_1$ , a novel nortropane alkaloid with a bridgehead amino group from *Hyoscyamus niger*: structure determination and glycosidase inhibitory activities 169

## Sucrose, 1',6'-disubstituted

Synthesis of 1',6'-disubstituted sucroses and their behavior as glucosyl donors for a microbial  $\alpha$ -glucosyltransferase 61

## Sucrose esters

Synthesis of 6-O-acetyl-2,3,4-tri-O-[(S)-2-methylbutyryl]sucrose and the three regioisomers of 6-O-acetyl-2,3,4-O-[(S)-2-methylbutyryl]-di-O-[(S)-3-methylpentanoyl]sucrose, naturally occurring fatty acid esters of sucrose found in tobacco 271

## Sugar beet

Isolation and characterization of a boron-

rhamnogalacturonan-II complex from cell walls of sugar beet pulp 1

## Sugars

FTIR and laser-Raman spectra of oligosaccharides in water: characterization of the glycosidic bond 145

## Sugars, deoxygenated

Synthesis of the methyl  $\alpha$ -glycosides of some isomalto-oligosaccharides specifically deoxygenated at position C-3 191

## Synthesis

An efficient short-step total synthesis of ganglioside  $\text{GM}_3$ : effective usage of the neighbouring group participation strategy 207

## Thio-sugars

Molecular structure of [4-(4-cyanobenzoyl)phenyl] 1,5-dithio- $\beta$ -D-xylopyranoside (naro-parcil) in the solid state and in solution: an investigation by X-ray crystallography, molecular mechanics calculations, and NMR spectroscopy 35

## Transglycosylation

Synthesis of allyl  $\beta$ -D-galactopyranoside from lactose using *Streptococcus thermophilus*  $\beta$ -D-galactosidase 279

## X-ray crystallography

Molecular structure of [4-(4-cyanobenzoyl)phenyl] 1,5-dithio- $\beta$ -D-xylopyranoside (naro-parcil) in the solid state and in solution: an investigation by X-ray crystallography, molecular mechanics calculations, and NMR spectroscopy 35

## X-ray structure

Preparation of methyl  $\beta$ -L-idoseptanoside and its derivatives 249

The crystal structure of methyl 5-O-acetyl-2-O-benzoyl-3,4-O-isopropylidene- $\beta$ -L-idoseptanoside 265

## Xyloglucan

A new polysaccharide from a traditional Nigerian plant food: *Detarium senegalense* Gmelin 229

## Zinc-saccharide complex

Metal-saccharide chemistry and biology: saccharide complexes of zinc and their effect on metallothionein synthesis in mice 73